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Article

Discussion on the influence of the external effects of agricultural mechanization on rural revitalization, path exploration, and policy exploration

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Abstract: The agricultural mechanization revolution is a productivity transition based on technological evolution in the history of China's agriculture. In order to better explore the agricultural mechanization model that is most suitable for China, and to guide and make good use of the external effects of agricultural mechanization to supplement the advantages of rural revitalization, the In terms of policy, we will lay a solid foundation and support for China's agricultural mechanization, so as to fully solve the problems of hollowing and aging in the countryside in the next 15 years, and explore the path of realizing Chinese-style rural revitalization. Based on the reading of many previous literatures, this paper makes a profound reflection on the characteristics of China's regions and the problems existing in rural evolution. Based on the law of rural evolution in the next 15 years, it proposes, analyzes and solves problems. And put forward the evolution methods and policy choices that our country should pay attention to in this rural revitalization strategy adjustment.

Keywords: agricultural mechanization; external effects; rural revitalization

1. Introduction

The rapid evolution of industrialization and urbanization has led to the increasing attraction of large cities to the rural population, and for the young population, the prosperous urban background and the human needs that are constantly being created by capital have made the young population's dependence on the native life continue to diminish, and the leaping loss of the young population has made the structure of the population employed in the primary industry continue to tend to be aging, and the proportion of the overall industry has continued to decline. Since the 18th Party Congress, the Party Central Committee has attached great importance to the issue of food security, a series of policies to benefit agriculture, agriculture and agriculture, represented by a number of central No. 1 documents, the proposed strategy of rural revitalization, emphasizing General Secretary Xi's determination to "keep the rice bowls of the Chinese people in their own hands at all times", 1.8 billion mu of arable land. The establishment of the red line also reflects the expertise of the Party Central Committee for the "long teeth" of the arable land protection policy, in this context, the heavy physical characteristics of agriculture

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to reduce the demand for labor inputs has become the original driving force for the development of agricultural mechanization.

2. The Evolution of Theoretical Logic and the Proposal of Agricultural Problems

This paper discusses the impact of the external effects of agricultural mechanization on rural revitalization from three perspectives, namely, population migration between urban and rural areas, large-scale operation of agriculture, and differentiation between food-producing regions. Population migration between urban and rural areas, on the one hand, is the cause of induced institutional change of agricultural large-scale operation, and on the other hand, is the policy consideration of mandatory institutional change adopted by the state in the face of the momentum due to large-scale population migration between urban and rural areas, with the purpose of promoting the mode of large-scale operation of agriculture, integrating the land in rural areas under the guidance of the principle of appropriateness, and realizing the service of agricultural skills, so as to prompt increase the output, quality and efficiency of regional agricultural products. However, in the current stage of industrial restructuring, the growth rate of regional agriculture is highly negatively correlated with the increase in the level of regional industrialization and urbanization, and thus in the next fifteen years, the degree of regional differentiation of China's agricultural growth will be spatially differentiated and structurally differentiated [1]. In the following, we will construct three kinds of theoretical logic and propose the corresponding agricultural problems.

2.1. The Direct Impact of Population Migration Between Urban and Rural Areas: Shortage of Agricultural Labor, Idle Land Resources

Undoubtedly, the massive influx of rural population into cities will bring two phenomena: shortage of agricultural labor and idle land resources. Since the 1990s, the phenomenon of population migration between urban and rural areas in China has begun to intensify, and the nature and structure of China's labor market has begun to undergo a dramatic evolution [2]. Due to the massive loss of rural young and strong labor force, agriculture, which is already characterized by heavy physical labor, began to lose the main age structure of the labor force, and at the same time, a large number of contracted land resources began to appear idle, abandonment of land and other phenomena, and for part-time farmers, due to the high income brought by going to the city to engage in non-agricultural activities in the agricultural leisure season, it can not help but to appear the phenomenon of rough ploughing and leisure farming, which is undoubtedly in the face of the agricultural This is undoubtedly a new type of waste of land resources in the face of incomplete input of agricultural labor.

Therefore, in the face of the shortage of agricultural labor, the promotion of agricultural mechanization has become a logical step. 2004, the central government formally promulgated the Law on the Promotion of Agricultural Mechanization, and in the following year, it began to promote the promotion of agricultural mechanization by means of financial subsidies and direct inputs, especially since 2009, the central government's inputs into agricultural mechanization have exceeded those of local finances, and become the absolute main body of the government's inputs. The external effects of the promotion of agricultural mechanization on rural revitalization are mainly twofold: first, the substitution effect of agricultural mechanization will replace more agricultural laborers from the land through the form of technological replacement, thus exacerbating the rate of population migration between urban and rural areas, making the phenomenon of rural aging, hollowing out, and marginalization intensify, which is reflected as a negative external effect on rural revitalization, and, secondly. The income effect of agricultural mechanization will change the general employment pattern of farmers by affecting their labor productivity, and a large number of farmers will tend to two situations when their income increases, i.e., they will either further invest the increased income in agriculture to form a virtuous cycle, or they will tend to continue to increase their non-farming income to achieve career transition [3]. In the case of a large amount of idle land resources, it will promote the generation of new professional farmers, the externalization of agricultural public services, the attraction of foreign capital to the countryside, and the intensification of the phenomenon of part-time employment of farmers who are former land contractors, which is reflected as a positive external effect on rural revitalization.

2.2. Extension Effect of Agricultural Scale Operation: Concentration of Land Resources, Advancement of Agricultural Mechanization

In the 1980s, the prevalence of the household contract responsibility system realized the extraction of the government's mandatory system change dividend, and at the same time, it also made the strengthened farmers' land property rights constraints on the further concentration of agricultural resources, and realized the emancipation of agricultural productivity in the form of post-production disguised as private ownership [4]. The most direct adverse consequence of the prevalence of the household contract responsibility system is the decline of the rural collective economy, which has also led to the destruction, to varying degrees, of the foundation of agricultural mechanization accumulated since the period of the collectivized economy, and the decline in the level of agricultural mechanization has further exacerbated the further dispersion of agricultural resources [5]. The reform of "separation of three rights" has allowed farmers to gradually revitalize their land management rights, providing conditions for the promotion of large-scale agricultural management, while a series of prohibitions on the "de-farming" of land also reflects the state's increased concern for food security [4]. Logically, the scale of agricultural operation will form the economic effect of scale and inhibit the negative effect of part-time farming on land productivity. In 2008, the "CPC Central Committee on promoting rural reform and development of a number of major issues in the decision" (hereinafter referred to as the "decision") again explicitly require "the development of various forms of moderate scale operation", since the launch of the "decision", the CPC Central Committee began to carry out the promotion of large-scale operation mode of agriculture on a national scale, the scale of agricultural business is still relatively decentralized and low stage, the specific reason is that the transfer of land management rights to the land is difficult, but also the development of the agricultural industry. The specific reason is that the dilemma of land management right transfer has become the main contradiction limiting the concentration of land resources [6]. In 2014, the Central Rural Work Conference further proposed to guide and standardize the land transfer, realize the orderly transfer of land management right, and remove obstacles to the development of agricultural large-scale operation. Since then, there has been an institutional basis for the promotion of agricultural large-scale operation, which also provides conditions for the further development of agricultural mechanization.

On the basis of the above, large-scale operation of agriculture requires the concentration of land resources, and the relative concentration of land resources and the relative shortage of agricultural labor creates the background for the promotion of agricultural mechanization, in the face of increasing dependence on the external market environment, the development of the economy for the advancement of agricultural mechanization provides the impetus. With the further deepening of China's aging and labor security system further improved, the rights and interests of migrant workers continue to be protected by the government, the labor remuneration of migrant workers is also rising, this increase in non-farm income will lead to foreign capital began to influx into the countryside through the market channels, so that the rural land acquisition costs, rental costs, contracting costs continue to rise in the case of the land began to capitalize on the case of the original long cycle, high risk, high investment characteristics of the agricultural mechanization, the land is the most important factor in the development of agricultural mechanization. In the case of land capitalization, agriculture, which is already characterized by long cycles, high risks and high inputs, is further aggravated, and the marginal returns of agriculture further diminish [1]. China's rural land contracting operation has been presented to the farmers on the land dependence and identity characteristics, in the face of external market risks farmers tend to retain a part of their own land to resist the risk, and a strong sense of local sentiment also makes the farmers on the land with irrational emotional factors, therefore, China's agricultural production often presents a higher material dependence on fertilizers, pesticides, farmers in order to occupy the land in order to reduce the system of land transfer promotion tend to choose a higher degree of dependence, the farmers to occupy their own land to reduce the system of land transfer, the farmers to occupy their own land to reduce the system of land transfer. The push of land transfer tends to choose lower labor cost input methods for farming, on this basis, farmers engaged in agricultural production is not in pursuit of high quality and high yield, but rather to occupy or not to waste the self-retained land as the main purpose of the system defensive behavior [7].

Therefore, one of the external effects of agricultural mechanization is to make today's large-scale operation of agriculture possible, the original absolute contradiction between man and land because of technological progress, system liberalization, capital invasion gradually transformed into a relative contradiction, especially the use of small tractors to make the mountainous and hilly areas of the mechanization of farming has become possible, which also makes China's traditional agriculture Because of agricultural mechanization gradually modernized from labor-intensive into technology-intensive, conducive to the decline in the rate of diminishing marginal returns in agriculture, at the same time, also makes the land turnover rate began to rise, one of the great manifestations of the farmers to land into the shares, by the collective for the farmers to go out to engage in non-agricultural industry to take care of the land. The further increase in the land transfer rate will make the scale effect of large-scale agricultural operations to further enhance the formation of "agricultural mechanization to promote the replacement of more labor force into the city - land transfer rate rise --The effect of agricultural scale embodied - the purchase of more fixed assets to invest in agriculture "virtuous cycle. In a sense, the external effect of agricultural mechanization here is another embodiment of the collective economy once disintegrated due to the "big baggage" is now beginning to adapt to the form of market economy recovery, for the revitalization of the rural collective industry provides a new reference idea.

2.3. Comparative Advantages of Differentiation Between Food-Producing Regions: the Rise of Specialty Agriculture, Agricultural Branding

China's agriculture due to the evolution of industrial structure differences, differences in resource endowment of agricultural regions, differences in national agricultural support policies and other aspects of the differentiation of the impact of the inter-regional grain production situation presents a different stage, different speeds, different products, different yields of the four aspects of the characteristics of the current stage of evolution of the industrial structure, the rate of growth of agriculture and the level of industrialization of the region's industrialization of towns and cities show a highly negative correlation between the level of [1]. Taking Yunnan Dounan as an example, the flower industry in the region has been initiated by farmers spontaneously since the 1880s, and after more than twenty years of considerable development, it has become the first village of flowers in the country; according to relevant data, about 1/3-1/4 of the national flower market share is occupied by Dounan, and 80% of Dounan's flowers are sold to more than 70 large and medium-sized cities across the country, with North, Shanghai and Guangzhou as the cities occupying the largest proportion, and that the The local government has realized the construction of the flower industrial park in Dounan, Yunnan by improving the infrastructure construction, providing policy support, financial encouragement, supporting services, training platform and other initiatives, which has made the flower industry a local characteristic agriculture, created the agricultural brand of Dounan flowers, and polished the business card of Yunnan's geographic special area [8]. The phenomenon of variety differentiation and regional differentiation among food-producing regions is a reasonable phenomenon combined with China's natural and economic characteristics, and the industrialization policy of Yunnan Dounan has made it possible to form a unique local characteristics and strong government support for the industrialization of Dounan's industrialization support system, which undoubtedly makes the flower industry in Yunnan Dounan form an unrepeatable industrial park model, and also builds a relatively monopolistic market system for the flower industry in Yunnan Dounan. Relative monopoly of the market system.

The external effect of agricultural mechanization here is to accelerate the differentiation between food-producing regions and promote the process of agricultural industrialization, further upgrading the economies of scale of agricultural industrial parks, especially the input of a large number of agricultural machinery to make the production process of special agriculture presenting the characteristics of reduced labor input, increased precision of agricultural products, increased agricultural production, etc., and also for the construction of the support system for agricultural industrialization to reduce the cost of agricultural machinery. It also lowers the threshold conditions for the construction of agricultural industrialization support system, which motivates the regions to create agricultural product brands with local characteristics and realize the dream of industrial revitalization for rural revitalization. In response to the above three theoretical logics, this paper offers the following insights.

2.4. The Promotion of Agricultural Mechanization Will Accelerate the Migration Between Urban and Rural Populations, Limiting the Development of Chinese Agriculture

By the end of 2021, the number of migrant workers in China had reached 292.51 million, and with the further development of the economy, the promotion of agricultural mechanization will shift the agricultural population originally bound to the land to the non-agricultural population by virtue of its developed productivity model, thus accelerating the phenomenon of migration between urban and rural populations [9]. And with the evolution of time, the labor cost of the agricultural employed population will be much higher relative to the labor cost of non-agricultural employment, which will further limit the competitive level of Chinese agriculture. Under the current conditions, Chinese agriculture still belongs to the model of crude growth, over-reliance on crude inputs of nitrogen, phosphorus, and potassium fertilizers, over-reliance on crude inputs of pesticides, etc., all of which will cause irrational changes to the soil structure, or even damage it, so that the compatibility between crops and soils decreases, resulting in a series of unfavorable conditions for sustainable development such as a decline in land fertility in the future, eutrophication of water bodies, pollution of groundwater, and degradation of grassland ecological systems, sustainable development [10]. The phenomenon of population migration between urban and rural areas has intensified, which will further drive the loss of young and middle-aged agricultural labor force, and under the assumption of farmers' "rational man", the loss of young and middle-aged labor force will make the structure of the agricultural employment population shift to aging, so in order to adapt to the requirements of high physical strength and high inputs in agriculture, the farmers can only continue to crude inputs of pesticides and chemical fertilizers to form a path of development based on the development of the agricultural industry. Therefore, in order to adapt to the high physical strength and high input requirements of agriculture, farmers can only continue to form a path of dependence based on the crude input of pesticides and chemical fertilizers, thus further damaging the rural ecological environment. As a result, both the loss of young and middle-aged rural laborers and the destruction of the ecological environment will limit the development of Chinese agriculture in the future.

2.5. The Loss of Young and Middle-Aged Laborers in the Countryside Creates Conditions for Large-Scale Agricultural Management and Improves the Degree of Agricultural Mechanization

The accelerated loss of rural young and strong labor force will inevitably lead to land visible idleness and hidden idleness, thus hindering the further enhancement of agricultural production, therefore, in the People's Republic of China after the promulgation of the Law of the People's Republic of China on the Contracting of Rural Land, farmers only in the law with full authority to transfer agricultural land, thus beginning to pull open the prelude to the transfer of agricultural land in China. The accelerated migration of rural laborers and the reform of urban and rural household registration system have led to a rapid increase in the rate of agricultural land transfer in China, which has increased by more than 30% in a decade relying on a decade, from 4.57% in 2006, with the eastern region being significantly higher than the western region, all of which has provided the key land elements for large-scale agricultural operations [11]. The acceleration of the speed of land transfer and the increase in the number of transfers will increase the degree of land concentration in the hands of agricultural management subjects, thus promoting the increase in the degree of large-scale operation of land, at the same time, the operation of small plots of land does not exclude the mechanization of agriculture, agricultural machinery represented by walk-behind tractors will reduce the price of agricultural labor, and the relative price ratio of labor is inversely proportional to the degree of agricultural mechanization, the relative price of agricultural labor Decrease will in turn increase the degree of agricultural mechanization, thus making the degree of agricultural scale operation and the degree of agricultural mechanization are improved [12].

2.6. The increase in the degree of agricultural mechanization will promote the differentiation of food-producing regions and the regionalization of agricultural industrial parks.

The improvement of agricultural mechanization will make the differentiation degree of food-producing regions which are increasingly differentiated due to natural characteristics further increase, and the gap between the mechanization level of different crops will also be more obvious due to the type of crops, characteristics and

other natural characteristics, which is specifically manifested in the rapid improvement of the mechanization level of food crops, and the mechanization level of cash crops, although there is a key progress in the overall mechanization level, but it still presents a lagging state of development, and becomes a major factor in the development of food-producing regions. development lagging behind, becoming a reason for further differentiation of grain-producing regions (Jiao Changquan et al., 2018) [5]. At present, China's grain-producing regions mainly present the state of "total amount is insufficient, variety differentiation", in the next 15 years, China's grain in 2019, for example, the net import demand has reached 1.03 tons, it is projected that by 2029, China's total demand for food will reach 854 million tons of the peak, a huge food gap and restricted The upper limit of agricultural development constitutes a letter to us to solve the food demand gap contradiction, and the relatively slow development of animal husbandry in the current cost of feed grains gradually climb the status quo, but also presents China's main livestock product prices higher than foreign countries and the magnitude of the phenomenon is constantly expanding, to milk, for example, China's milk production by more than 32 million tons of 2008 as the baseline for a long time to present up and down fluctuations, hovering, but the net imports of dairy products in China has reached 1.03 million tons. China's net imports of dairy products has gradually increased from 600,000 tons in 2008 to more than 15 million tons in 2019 [1]. In the "total amount is not enough, varieties of differentiation" pattern, the promotion of China's agricultural mechanization will prompt Guangdong, Yunnan, Guizhou and other high-growth areas to take the lead in the realization of the industrialization of agriculture and industrial parks in the direction of the facilitation of agricultural machinery brought about by the high-growth model will make the local characteristics of the formation of agriculture as the center of the core competitiveness of the industrial clusters, and to further drive the growth of the local economy; while the high economic growth, high tax revenue growth, but also to promote the local government to provide more policies to facilitate the facilitation of the platform facilitates the decline in the transaction costs of enterprises to facilitate the integration of enterprises into the local industrial chain, so that the full play of the role of the lead.

3. Analysis of the External Effects of Agricultural Mechanization

The external effect of agricultural mechanization can be divided into spatial spillover effect and time spillover accordingly, which is specifically manifested as horizontal productivity liberation and vertical labor force liberation.

From the spatial spillover effect, first, large and medium-sized agricultural machinery cross-area service leads to the level of agricultural mechanization of food crop production has a spatial spillover effect, and the level of agricultural mechanization in the surrounding areas will have a significant positive impact on the range of food crop production; second, large and medium-sized agricultural machinery because of their own mechanical characteristics, will have a wide radiation surface, high radiation efficiency, radiation distance radiation characteristics. The spatial spillover effect for areas within half a day's economic distance accounts for 68.3%, and for areas within one day's economic distance accounts for 85.4%; third, the spatial spillover effect of large and medium-sized agricultural machinery is mainly manifested in the cross-latitude areas, which is due to China's three-step geographic characteristics, and in the face of the middle and high-latitude areas, it is mainly manifested in the cross-latitude operation of large and medium-sized agricultural machinery with the help of flat terrain, and in the face of the middle and high latitude areas. In the middle and high latitude regions, it is mainly reflected in the cross-latitude operation of large and medium-sized agricultural machinery with the help of flat terrain, while in the low latitude regions, since the terrain is mainly mountainous and hilly, it is mainly reflected in the use of small walking tractors to achieve localized and specific spatial spillover effects; fourth, the level of spatial spillover effects of agricultural machinery has been increasing year by year, of which the level of spatial spillover effects of agricultural machinery in the period of 2011–2014 was 4.6 times higher than that of the period of 2001 -4.6 times in 2005, which also simultaneously fits the expansion of the scale of cross-regional third-party services for agricultural machinery in China [13].

From the time spillover effect, first, agricultural machinery for the original bound to the land of the farmers have the role of labor liberation, on the one hand, by agricultural machinery to improve the productivity of

farmers will reduce the cost of labor, especially for the agriculture of this heavy physical, long hours of labor mode has the role of reducing the transaction costs of farmers, the original need for long hours into the heavy physical labor of the farmers now due to the external effects of agricultural mechanization and gained a new level of agricultural machinery. Mechanization of the external effect of the farmers have been liberated, then, relative to the previous, the additional free time can be engaged in other activities, especially non-agricultural activities, one-sidedly increase the income of farmers, so that the farmers have obtained the agricultural mechanization of the time spillover effect can be obtained, on the other hand, by the impact of agricultural mechanization of the farmers will be due to the short-term profit-seeking behavior and the behavior of the replication, so that the surrounding Non-agricultural mechanized farmers or farmers who have not yet been mechanized to form a competitive situation under the promotion of the role of farmers will be successively liberated from the original labor inputs, which in turn will also have a positive effect on the promotion and spread of agricultural mechanization. Secondly, agricultural mechanization will change the planting structure of food, which will, to a certain extent, lead to a relative change in farmers' labor time [9]. Due to the promotion of large and medium-sized agricultural machinery, crops in the middle and high latitude areas will gradually show the trend of intensive management, which is specifically manifested in the zoning of food crops and cash crops, the centralization, specialization and large-scale operation of single types of crops, and the mixing, complementation and large-scale cultivation of multiple types of crops, which will also have a certain degree of impact on the temporal migratory behavior of the agricultural labor force, which will affect the supply and demand situation of the urban and rural labor market. supply and demand in the market. Thirdly, the use of large and medium-sized agricultural machinery services will lead to the phenomenon of the initial large-scale division of labor in agriculture, making the land reclamation link and harvesting link gradually mechanized, thus, on the one hand, releasing the labor potential of farmers and creating conditions, especially time conditions, for farmers to further engage in non-agricultural links or other agricultural links, and on the other hand, creating favorable conditions for the further popularization of agricultural mechanization in order to compress the time of agricultural labor or migration of Agricultural labor time to create favorable conditions, specifically reflected in the farmers engaged in non-agricultural activities to increase the time and engaged in agricultural labor time to reduce the overall distribution of non-agricultural activities is reflected in the horizontal increase in the scope of time, the time of agricultural labor vertical concentration. Fourth, agricultural mechanization will accelerate the phenomenon of farmland abandonment in land transfer, making the already serious phenomenon of farmland abandonment show further fragmentation and remoteness, which also makes the costs of farmland abandonment management, land integration services, and reclamation of abandoned farmland intensify, especially the time cost, which is embodied in the lengthening of the time cost of management, and the time scope of the horizontal expansion [11].

4. Path Exploration of Agricultural Mechanization

At present, in the context of the family contract responsibility system, agricultural mechanization inputs, use and promotion will break the current tripartite pattern of agricultural - land - people bound, release production potential, thus affecting the degree of population migration between urban and rural areas, the degree of agricultural scale, the degree of food-producing areas between the degree of differentiation, for this reason, this paper puts forward the following path of agricultural mechanization to explore.

(1) Promote agricultural machinery according to local conditions to realize the liberation of agricultural productivity. For the middle and high latitude areas, such as the Jianghan Plain, the North China Plain and other areas to promote large and medium-sized tractors, large and medium-sized rice transplanter and other large agricultural machinery according to local conditions, and advocate the outsourcing of large and medium-sized agricultural machinery services to promote the comprehensive purchase of third-party rice transplanter, harvesting services, etc., and improve the rational use of the external effects of agricultural mechanization, and can be used for the high and low position between the regions is not a big span between the regions, the government can adopt the regions jointly purchased the form of agricultural mechanization. For regions with a small span of high and low locations, the government can adopt the form of joint purchasing between regions to

directly or indirectly subsidize farmers during the busy season, thus effectively improving the level of agricultural mechanization and the implementation of policies to help and benefit farmers. For low latitude areas and hilly areas, the government should "directly put + indirect subsidies" in the form of agricultural machinery to promote the form of regional locking and joint purchase of small walking tractors for agricultural bulk ordering, thus effectively reducing the indiscriminate use of funds to assist and benefit agriculture, reduce administrative transaction costs and promote Transaction costs, to achieve the level of agricultural mechanization and the improvement of the level of agricultural assistance and benefit to agriculture.

(2) Implementing agricultural industrialization through regional division and helping agricultural industrial parks. Through the big data informatization platform to the regional differentiation phenomenon for a reasonable summary, locking the current high growth areas, such as Guangdong Province, Yunnan Province, Gansu Province and Guizhou Province, etc., on which the "government-guided, enterprise stationed, farmers to participate in the" mode to introduce the relevant ancillary facilities, agricultural machinery, grain-producing areas that have been differentiated into zones Operation and management, at the same time, set up a specialized agricultural processing plant, agricultural services supermarkets and other business entities in the area, reduce the search cost of farmers, business users and transaction costs, so that the industrial park agglomeration effect emerges, so that the formation of economies of scale, to release the economic vitality.

(3) Upgrade the mechanization of traditional farmers and increase the proportion of part-time farmers. Through the government's direct investment and indirect subsidies in the form of mechanization upgrading of traditional farmers, so as to increase the proportion of farmers using agricultural machinery, reduce the farmers' time transaction costs, for farmers to engage in non-agricultural activities to provide a time base, and ultimately promote the phenomenon of farmers' part-time employment. The phenomenon of part-time farmers has a positive effect on maintaining social stability, absorbing political costs, and raising the threshold of financial risk. Part-time farmers who stray between urban and rural areas are front-line workers in various fields when they are not farming, adding bricks and mortar to the design of urban buildings and contributing labor to the transportation of urban services, and then return to the land to become farmers during busy periods or risky periods, objectively absorbing up social, financial, and political risks [14].

5. Policy Recommendations

The external effect of agricultural mechanization has a deep impact on rural revitalization, and the input and use of agricultural machinery is of positive value and significance for releasing the production potential of rural areas and stimulating the capacity building of the rural autopoietic system, to this end, this paper puts forward the following policy recommendations:

(1) Based on regional comparative advantages, develop a good blueprint for agricultural mechanization. Local governments should combine the local actual situation, find out where the comparative advantage between regions, to 5–15 years for the industrial growth cycle, in advance to develop a good future agricultural mechanization input blueprint, use blueprint, for the regional development of local characteristics of agricultural products to create a solid power base.

(2) The public service of agricultural machinery to release the potential of market allocation of resources. Local governments can actively promote the outsourcing of agricultural machinery services, create agricultural services supermarket, shaping the agricultural professional manager model, with the help of production - government - package form, the third-party business entities to promote and support, so as to give full play to the ability of the market to allocate resources, with the help of the market this "invisible hand" and the government plan this With the help of the "invisible hand" of the market and the "tangible hand" of the government plan to play the concerto of rural revitalization.

(3) Take agricultural industrial parks as the pole and improve the scale effect of industrial parks. The government should actively promote the regional industrialization of agriculture to industrial parks to move forward, relying on the "government stage, enterprise singing" mode of agricultural enterprises to actively lead, and can use policy financial assistance, optimize the policy environment, provide exchange platforms, joint university research and development, and other forms of agricultural enterprises to help support, so as to fully

improve the economic effect of scale of agricultural industrial parks. The scale economy effect of the industrial park, release the production potential.

6. Insufficiency and Prospect

This paper summarizes, condenses, and puts forward its own viewpoints on the basis of the previous literature, with the help of analyzing the external effects of agricultural mechanization, combined with the theme of rural revitalization of the agricultural field of labor migration, agricultural mechanization services and other phenomena, and puts forward the relevant issues and paths to explore, and gives the policy recommendations on the basis of the authors of this paper for their own viewpoints to supplement. However, there are still deficiencies in the specific data analysis and exploration of agricultural mechanization, rural revitalization of specific issues related to and mechanization policy exploration, truth-seeking. For the next fifteen years of rural evolution and development law grasp, there is still the possibility of technological change, for the dividends of technological change beyond the system change, thus triggering the possibility of productivity revolution, the author of this paper holds a positive attitude.

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